REMARKS

Claims 1-11 are pending in the above-identified application. Support for new claims 9-11 is found at pages 5-6 of the specification, as well as in the original claims.

Issues under 35 U.S.C. §103 (a)

Claims 1-8 have been rejected under 35 U.S.C. §103(a)as being unpatentable over Uchida '446 (EP 1 072 446 A2) in view of Marzocchi '682 (USP 3,865,682) and Watanabe '986 (USP 2002/0176986 A1) and optionally further in view of Agarwal '136 (USP 5,173,136). This rejection is traversed for the following reasons.

Present Invention and Its Advantages

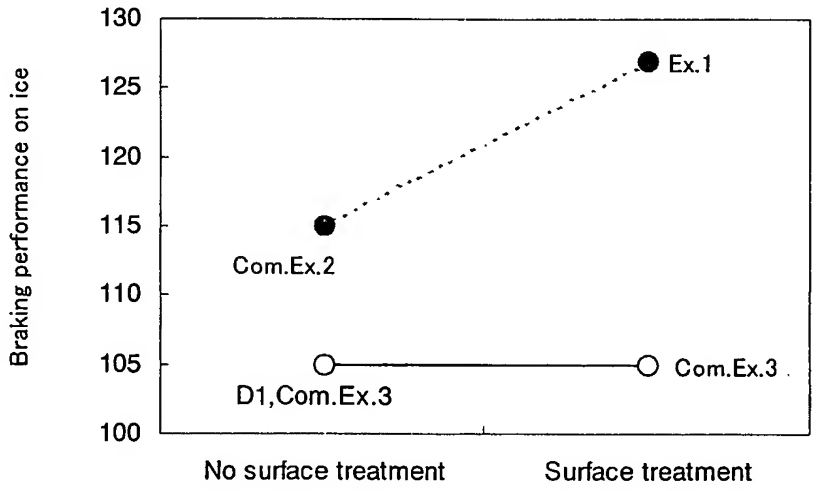
The present invention is directed to a studless tire which exhibits advantageously improved breaking properties and abrasion resistance properties. The studless tire of the present invention employs the unique combination of: [1] non-metal short fibers which have been surface treated (e.g. surface treated with a silane containing sulfur or resorcinol-formaldehyde-latex (RFL)); and [2] incorporation of the fibers into the tire such that the fibers are oriented in the tread thickness direction, as recited in the present claims.

The comparative test evidence supporting the unexpected, advantageous properties of the studless tire of the present invention which is summarized in Table 1 on pages 12-14 of the present specification shows that Examples 1 and 2 (present invention) exhibit advantageously improved braking properties and abrasion resistance properties over Comparative Example 2 (oriented short fiber, not surface treated) and Comparative Example 3 (non-oriented short fiber,

surface treated). Consequently, it is clear that the combination of both [1] fiber surface treatment, and [2] fiber orientation must be employed in order to obtain the advantageously improved properties exhibited by the present invention. Employment of one of these features, without the other, still results in inferior breaking and abrasion resistance properties as shown by these comparative tests.

Distinctions between Present Invention and Uchida '446

Uchida '446 generally discloses the complex elastic modulus ratio range and tread rubber hardness properties recited in the present claims, but fails to disclose or suggest the use of a surface treating agent for the non-metal short fiber contained in the studless tire. Thus, Uchida '446 corresponds to Comparative Example 3 as noted above. In order to graphically illustrate the differences between Uchida '446 and the present invention, below is a graph which designates as "D1" the Uchida '446 embodiment.



In view of the above, it is clear that significant patentable distinctions exist between the present invention and Uchida '446. Not only does Uchida '446 fail to disclose or suggest the

employment of surface-treated fibers, but this reference also fails to recognize the advantageously improved braking properties and abrasion resistance properties attained by the studless tire of the present invention. Thus, significant patentable distinctions exist between the present invention and Uchida '446.

Distinctions between Present Invention and the Remaining References

Marzocchi '682 discloses glass fiber reinforced elastomers which may be coated with "RFL". Marzocchi '682 generally discloses that the glass fibers may be employed to make tires as noted at the bottom of column 1.

Marzocchi '682 fails to disclose or suggest employing fibers which are oriented in the tread thickness direction as in the studless tire of the present invention. Thus, Marzocchi '682 fails to recognize the advantages achieved by the present invention with regard to improved braking properties and adhesion resistance as discussed above. Therefore, significant patentable distinctions exist between the present invention and Marzocchi '682.

Watanabe '986 discloses fiber for reinforcing rubber products, such as tires. Watanabe '986 suffers from the same deficiencies as noted above with regard to Marzocchi '682 in that the general disclosure of the use of glass fibers in tires fails to specifically disclose or suggest the employment of fibers oriented in the tread thickness direction as in the tire of the present invention. Thus, Watanabe '986 fails to recognize the advantages of the present invention such that significant patentable distinctions exist over this reference.

Agarwal '136 discloses a tire embedded with oblong fibers. The fibers are randomly oriented as shown by the illustrations. Agarwal '136 discloses that the dimensions of the fibers

are such that the thickness thereof is "about 0.013 cm (0.005 [in.]) to 0.043 cm (0.017 [in.])" as noted at column 2, line 24. In this regard, it appears clear that there is a typographical error for the numbers shown in the parenthesis which should have been indicated for "inch" units, not centimeter units.

Agarwal '136 basically corresponds to Comparative Example 3 wherein the glass fibers are not oriented in the tread thickness direction. Further, Agarwal '136 cannot be combined with Uchida '446, since the dimensions of the fiber described in Agarwal '136 conflict with the dimensions of the fiber disclosed by Uchida '446 (which cannot be greater than .010 cm). Agarwal '136 further fails to recognize the advantages associated with the present invention as evidenced by the comparative test results discussed above. Therefore, significant patentable distinctions exist between the present invention and Agarwal '136.

Conclusion

It is submitted for the reasons stated above that the present claims define patentable subject matter such that this application should now be placed condition for allowance.

If any questions arise regarding the above matters, please contact Applicant's representative, Andrew D. Meikle (Reg. No. 32,868), in the Washington Metropolitan Area at the phone number listed below.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 02-2448, under Order No. 1403-0250P from which the undersigned is authorized to draw.

Dated: June 1, 2005

Respectfully submitted,

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